

REMARKS

This Amendment is in response to the Office Action mailed 04/09/2003. Reconsideration in light of the amendments and remarks made herein is respectfully requested.

In the Office Action, claims 35-38 and 45-49 were withdrawn; the abstract was objected to; an amendment to the specification filed 2/10/2003 was objected to; the drawings were objected to; claim 44 was objected to; claims 13-20, 37, 39-44, 47, and 49 were rejected under 35 USC 112, 2nd para.; claims 13-14, 16-17, 37, 39, 41, 47, and 49 were rejected under 35 USC 102(b); and claims 15, 18-20, 40, and 42-44 were rejected under 35 USC 103(a).

Claims 13-15, 17-18, 35-42, and 44-47 have been amended by this response. New claims 50-55 have been added. Claims 1-12 and 21-34 were previously cancelled. Accordingly, claims 13-20 and 35-55 remain pending in the application of which claims 35-38 and 45-49 are withdrawn. Of the pending claims, claims 13, 39, and 50 are independent claims.

I. Abstract

In section 2 of the Office Action, the Abstract of the Disclosure was objected to.

Specifically, the Office Action objected to the abstract as it "contains subject matter drawn to an alternate embodiment."

Applicant has reviewed MPEP § 608.01(b) cited by the Office Action. Applicant can find nothing in the "GUIDELINES FOR THE PREPARATION OF PATENT ABSTRACTS" in MPEP § 608.01(b) that restricts discussing alternate embodiments. Moreover, it

seems more prudent to discuss alternate embodiments in the abstract to better inform a reader.

Applicant respectfully submits that it is not improper to discuss alternate embodiments within an Abstract.

Applicant respectfully requests the withdrawal of this objection to the Abstract.

II. Specification

In section 3 of the Office Action, the Office Action objected to an amendment to the specification proposed in the amendment filed 02/10/2003 under 35 U.S.C. 132 because the amendment allegedly introduce new matter into the disclosure.

Specifically, the Office Action states "The added material which is not supported by the original specification is as follows: Page 7 of the marked-up version of the spec. recites that busses 24 and 26 are electrically isolated via clearance spaces 42, but Page 8 of the marked-up versions of the spec. recites that they are not."

Applicant respectfully disagrees. There is nothing stated in the amendment to the paragraph beginning on page 8, line 1 that recites that the busses 24 and 26 are not electrically isolated via clearance spaces 42.

Applicant respectfully requests the withdrawal of this objection to the specification.

Applicant has further amended the paragraph beginning on page 8, line 24 and continuing onto page 9 to correct an incorrect reference to Figure 5 to the proper reference of Figure 6. Figure 6 clearly shows the reference number 52 for the plating bath. Moreover, the Brief Description of the

Drawings supports this amendment in that it states "Figure 6 is a side view showing the package within a plating bath." [Original Specification, page 5, lines 15-16].

III. Drawings

In section 4 of the Office Action, the Office Action objected to the drawing of Fig. 5.

Specifically, the Office Action objected to the drawing of Fig. 5 because it "contradicts the claimed limitation recited in claim 18". Applicant respectfully disagrees.

Fig. 5 is shown and described in accordance with the limitations of claim 18. The description of the paragraph beginning on page 8, line 24 as its amended reflects the limitations recited in claim 18 and shown in Fig. 5.

Applicant respectfully requests the withdrawal of this objection to the drawing of Fig. 5.

In section 5 of the Office Action, the Office Action objected to all of the drawings.

Specifically, the Office Action objected to the drawings "under 37 CFR 1.83(a) because they fail to show entered Page 8, last three lines of marked-up version of amended paragraphs." Applicant respectfully disagrees.

Fig. 4 in particular illustrates how bond pads 16 on the first bond shelf 18 may be interconnected to other layers by vias 38. Fig. 1 in particular illustrates how vias 38 may be used to connect upper layers to contacts 32.

Applicant respectfully requests the withdrawal of this objection to the drawings.

In section 6 of the Office Action, the Office Action objected to all of the drawings.

Specifically, the Office Action objected to the drawings under 37 CFR 1.83(a) because they fail to show "the mask is covering all the first surface of the bond shelf" which is recited in a claim 18.

Applicant has amended claim 18 to remove the limitation of "all" found in the claim and added text to further clarify applicant's invention.

Applicant believes this objection to the drawings is now moot and respectfully request its withdrawal.

IV. Claim Objections

In section 7 of the Office Action, claim 44 was object to for being a substantial duplicate of claim 40.

Applicant has amended claim 44 to be dependent from claim 43 instead of claim 39.

Applicant respectfully submits that this amendment to claim 44 makes this objection to it now moot and respectfully requests its withdrawal.

V. Claim Rejections Under 35 U.S.C. § 112, second paragraph

In section 8 of the Office Action, claims 13-20, 37, 38-44, 47 and 49 were rejected under 35 U.S.C. 112, second paragraph for being indefinite. Applicant respectfully traverses this rejection.

Applicant's electronic package as recited in independent claim 13 is flexible in how the connections are made. A bond pad may be formed on a first surface of the bond shelf prior

to forming the conductive strip while another bond pad may be formed on the first surface of the bond shelf during the formation of the conductive strip. This is illustrated by Figures 1 and 4. Not all bond pads need be formed during the formation of the conductive strip. Some bond pads may be masked out during plating so that they can electrically connect to a different conductor. The pad configuration of different integrated circuits can vary the areas that are masked and unmasked during any plating of the electronic package so that different pin out configurations may be achieved.

The Office Action specifically rejected claim 18 in that it "it recites masking all surfaces of the bond shelf, but it fails to reserve an area of the first surface of the bond shelf to form 16".

Applicant has amended claim 18 to clarify Applicant's invention and in particular has deleted the word "all". In this manner claim 18 accommodates the further limitation of claim 37 in that an area of the first surface of the bond shelf may be used to form another bond pad.

The Office Action further states "Fig. 5 clearly contradicts the claimed limitations." Applicant respectfully disagrees.

Fig. 5 illustrates the masking of surfaces of the bond shelf except for surfaces that are to be plated. In particular the second surface of a bond shelf is unmasked so that it is plated. Moreover, Fig. 5 illustrates areas of other surfaces that are completely masked off and another surface that is partially unmasked (see the small indentations in maskant 50 of Fig. 5 for example) to accept a plated conductive material in certain portions of the surface. Fig.

6 illustrates the plating bath 52 to plate the conductive material into unmasked areas.

Applicant respectfully submits that the scope of the invention sought to be patented can be determined from the language of the claims with a reasonable degree of certainty in view of Applicant's disclosure and the claim interpretation that would be given by one possessing the ordinary level of skill in art at the time the invention was made.

For the foregoing reasons, Applicant respectfully request the withdrawal of the 35 U.S.C. 112, second paragraph claim rejection of claims 13-20, 37, 38-44, 47 and 49.

VI. Claim Rejections Under 35 U.S.C. § 102(b)

In section 11 of the Office Action, claims 13-14, 16-17, 37, 39, 41, 47 and 49 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 4,682,270 issued to Whitehead et al. ("Whitehead"). Applicant respectfully traverses.

"To anticipate a claim, the reference must teach every element of the claim. 'A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.' *Verdegaal Bros. V. Union Oil co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). 'The identical invention must be shown in as complete detail as is contained in the claim.' *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." [MPEP § 2131, Original 8th Edition, Aug. 2001, Pg. 2100-69].

Applicant has amended independent claims 13 and 39 to clarify the claimed invention. In particular, Applicant has amended the words "first" to --top-- and "second" to --inner side-- in independent claim 13, and amended the word "side" to --inside-- in independent claim 39 to clarify the surface where the bond pad is located and the conductive strip is formed. Applicant has further added the word --lengthwise-- in independent claim 13 to clarify how the conductive strip is formed along the inner side surface. Support for these amendments is provided in Applicant's originally filed figures (see Figures 1 and 4, in particular). Moreover, the words top, inner, side, inside, and lengthwise are common words that have ordinary meaning that can be found in a dictionary.

The Office Action states that "Whitehead discloses a housing 1 with a die attached therein, 4 extends from top, side and bottom of the housing 1, forming and etching copper plating on the housing by substrative method (col. 4, lines 53-57), and plating gold thereon." [Office Action, page 6, lines 11-13]. Applicant respectfully disagrees.

Applicant respectfully submits that Whitehead's conductors or contacts 4 are not formed "along the second surface of the bond shelf" as recited in Applicant's immediate prior version of claim 13. [Claim 13, lines 6-7]. Moreover, Applicant respectfully submits that Whitehead's conductors or contacts 4 are not plated "along the side surface of the bond shelf" as recited in Applicant's immediate prior version of claim 39. [Claim 39, lines 6-7].

Applicant has further amended claims 13 and 39 to further clarify Applicant's claimed invention as discussed previously.

Whitehead's conductors or contacts 4 are on the outer side or outside surfaces of Whitehead's chip carrier 1 as is

illustrated in Whitehead's Figs. 1a, 1b, and 1c. Whitehead's conductors or contacts 4 are not disclosed as being formed in Whitehead's central die mounting cavity 2.

Applicant respectfully submits that Whitehead does not disclose "forming a conductive strip lengthwise along the inner side surface of the bond shelf; and removing a portion of the conductive strip along the inner side surface of the bond shelf to form a pair of separate conductive strips lengthwise along the inner side surface of the bond shelf" as recited in Applicant's amended claim 13. [Claim 13, lines 6-11].

Applicant respectfully submits that Whitehead does not disclose "plating a conductive material along the inside surface of the bond shelf; and removing a portion of the conductive material along the inside surface of the bond shelf to form a pair of separate conductive strips along the inside surface of the bond shelf" as recited in Applicant's amended claim 39. [Claim 39, lines 6-11].

For the foregoing reasons, Applicant respectfully submits that Whitehead does not anticipate Applicant's invention as claimed in amended independent claims 13 and 39.

Claims 14, 16-17, and 37 depend directly or indirectly from independent claim 13. Claims 41, 47, and 49 depend directly or indirectly from independent claim 39. Applicant believes it has placed independent claims 13 and 39 in condition for allowance such that dependent claims 14, 16-17, 37; and 41, 47, 49 dependent respectively there-from with added limitations are also in condition for allowance.

Thus, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 102(b) rejection of claims 13-14, 16-17, 37, 39, 41, 47, and 49 over Whitehead.

VII. Claim Rejections Under 35 U.S.C. § 103(a)

In section 13, the Office Action rejected claims 15, 40, and 44 under 35 U.S.C. § 103(a) as being unpatentable over Whitehead in view of U.S. Pat. No. 4,223,321 issued to E. J. Doyle Kenworthy ("Kenworthy"). Applicant respectfully traverses this rejection.

"To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure." [MPEP § 2142; Original 8th Edition, Aug. 2001, Pg. 2100-121]. To establish "obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." [MPEP § 2143.03, Original 8th Edition, Aug. 2001, Pg. 2100-126].

The remarks above regarding Whitehead and the 35 U.S.C. §102(b) rejection of independent claims 13 and 39 are incorporated herein by reference.

Applicant respectfully submits that Whitehead does not make obvious Applicant's combination of elements recited in independent claims 13 and 39.

Further, the Office Action alleges that "Kenworthy discloses [] masking all surfaces of the bond shelf except for the second surface and plating the second surface with a conductive material (col. 3, lines 56-59 and col. 4, lines 4-9) thereby forming fine pitch conductor patterns to electrically communicate with electronic components mounted therein in the housing." [Office Action, page 5, lines 1-4]. Applicant respectfully disagrees.

Kenworthy generally discloses a planar-faced electrode for ink jet printers as its title suggests. No bond wires or bonding to Kenworthy's electrode is made so that ink drops can be charged and uncharged to print characters on a page as described in Kenworthy's Col. 1, lines 10-29]. Specifically Kenworthy does not disclose masking a bond shelf as the Office Action alleges.

The Office Action states that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Whitehead by masking all surfaces of the bond shelf except for the second surface to the Whitehead's housing, as taught by Kenworthy, for the purpose of forming fine pitch conductor patterns to electrically communicate with other electronic components mounted therein in the housing." [Office Action, page 7, lines 11-14]. Applicant respectfully disagrees.

The motivation suggested by the Office Action, "for the purpose of forming fine pitch conductor patterns to electrically communicate with other electronic components mounted therein in the housing" is not convincing.

"[T]he examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of

the references." [MPEP § 706.2(j), Original 8th Edition, Aug. 2001, Pg. 700-31; citing *Ex Parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App & Inter. 1985)].

The fine pitch conductor pattern referred to by the Office Action is for "the resolution requirements of the particular jet printing system in which the finished charge plate is to be installed." [Kenworthy, Col. 3, lines 41-43]. Moreover, the fine pitch required for ink jet printing may be insufficient for a bond shelf as the bond wires may electrically short together when mounted to bonding pads having such of a fine pitch or alternatively the bond pads may be of insufficient width to make a proper connection thereto with a bonding wire.

Additionally, to modify the fine pitch of Kenworthy for bond pads and bond wires would defeat its purpose of meeting high resolution requirements of ink jet printing. "If [a] proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." [MPEP § 2143.01, Original 8th Edition, Aug. 2001, Pg. 2100-124; citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)].

Furthermore, claims 15, and 40, 44 depend directly or indirectly from independent claims 13 and 39 respectively. Applicant believes it has placed independent claims 13 and 39 in condition for allowance such that dependent claims 15, and 40, 44 dependent respectively there-from with added limitations are also in condition for allowance.

Thus, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103(a) rejections of claims 15, 40, and 44 over Whitehead in view of Kenworthy.

In section 14, the Office Action rejected claims 18-20 and 42-43 under 35 U.S.C. § 103(a) as being unpatentable over Whitehead, Kenworthy and further in view of U.S. Pat. No. 6,073,344 issued to Japp et al. ("Japp"). Applicant respectfully traverses this rejection.

The Office Action admits that "Whitehead/Kenworthy fail to disclose drilling a portion of the second surface of the bond shelf including the conductive strip." [Office Action, Page 7, lines 19-20]. The Office Action relies on Japp to disclose "laser drilling (30 and 32) a portion of the second surface of the bond shelf including the conductive strip (area 34 consisting of 26 and 12) thereby providing a clean electrical isolation between two conductive areas without requiring deburing or other chemical treatment." [Office Action, Page 9, line 21-Page 10, line 2].

Applicant respectfully submits that Japp is not a prior art reference.

This application claims the benefit of and is a continuation of Application No. 09/153,630, filed September 15, 1998, now issued as U.S. Patent No. 6,153,829. Japp was filed on January 28, 1999, after the filing date of September 15, 1998 of the parent application 09/153,630.

According to 35 U.S.C. § 120, "[a]n application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, which is filed by an inventor or inventors named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed

before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application." [35 U.S.C. § 120].

This continuation application when filed was amended to contain a specific reference to claim the benefit of the earlier filed application. The cross reference to the related application has been updated herein to include the issued patent number of the parent patent application. Accordingly, this continuation application is entitled to the filing date of September 15, 1998 for Application No. 09/153,630 and predates the filing date of Japp. Thus, Japp is not a prior art reference to this continuation application.

For this reason, Applicant respectfully requests the withdrawal of the 35 U.S.C. § 103(a) claim rejections of claims 18-20 and 42-43 over Whitehead in view of Kenworthy and Japp.

VIII. New Claims

Applicant has added new claims 50-55.

New claims 50-55 are of a first impression. New claim 50 is a new independent claim. New claims 51-55 depend from independent claim 50.

New claims 50-55 borrow claim language from claims 13-18. and are supported by Applicant's drawings of the figures as originally filed (See Figures 1, 4, 5, and 7 in particular) and Applicant's specification and claims as originally filed (See claims 13-18; Page 8, line 1 through Page 9, line 19, in

particular). Moreover, the claim recites a cavity wall, which is supported by the original title of the parent patent application.

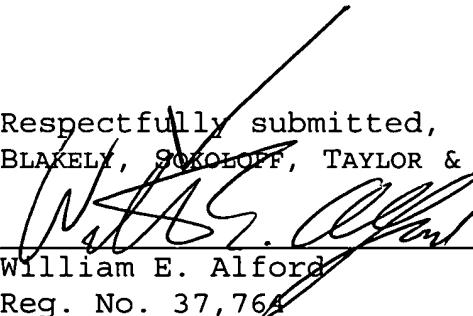
Independent claim 50 includes the limitation of "forming a conductive strip lengthwise along the rectangular cavity wall of the bond shelf" which Applicant respectfully submits is not disclosed in Whitehead. [Claim 50, lines 6-7]. Applicant believes independent claim 50 is in condition for allowance along with independent claims 13 and 39. Accordingly, Applicant believes that dependent claims 51-55 depending from independent claim 50 with further limitations are also in condition for allowance.

Applicant respectfully submits that new claims 50-55 are in condition for allowance.

CONCLUSION

In view of the foregoing it is respectfully submitted that the claims are in condition for allowance. Reconsideration of the rejections and objections is requested. Allowance of the claims at an early date is solicited.

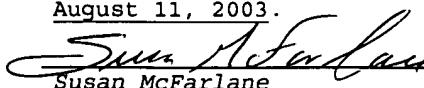
The Examiner is invited to contact Applicant's undersigned counsel by telephone at (714) 557-3800 to expedite the prosecution of this case should there be any unresolved matters remaining. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees in connection with the filing of this paper, including extension of time fees, to Deposit Account 02-2666 and please credit any excess fees to such deposit account.

Respectfully submitted,

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Susan McFarlane 8/11/03
Date